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Signed

Andrew Gersey

Dated 26 August 2003

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Patents Act 1977
(Rule 16)The
Patent
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The Patent Office

Cardiff Road
Newport
South Wales
NP9 1RH**Request for grant of a patent**

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

1. Your reference

NG/20752

2. Patent application number

(The Patent Office will fill in this part)

27 JUN 2002

0214980.5

3. Full name, address and postcode of the or of each applicant (underline all surnames)

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08413502001

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

LIFTING DEVICE

5. Name of your agent (if you have one)

A A THORNTON & CO

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

235 HIGH HOLBORN
LONDON WC1V 7LE

75001

Patents ADP number (if you know it)

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number
(if you know it)Date of filing
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

NO

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an applicant, or
 - c) any named applicant is a corporate body.
- See note (d))

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LIFTING DEVICE

This invention relates to a lifting device, and more particularly to a lifting device intended to assist individuals in rising from a seated position to a standing position.

Various lifting devices have been proposed to assist individuals, notably the elderly, invalids or those recuperating from surgery, to rise from a seated position to a standing position. In particular, devices for this purpose have been proposed which make use of compressed air to inflate a cushion which results in lifting of the user. Devices of this general type are disclosed, for example, in GB-A-941072, GB-A-1165740 and GB-A-2287878.

Whilst the broad concept of using an inflatable cushion to assist in the lifting of a user is disclosed in the prior art, the actual systems proposed in the prior art suffer from significant disadvantages. In this context, it must be remembered that the main users of devices of this type are likely to be old and frail. Accordingly, it is most important that the devices offer a high degree of stability and instil confidence in the users. A device which feels unstable is liable to be unacceptable to users, regardless of whether, in fact, there is any danger associated with its use. It must further be remembered that the device must be capable of being manufactured at reasonable cost and must give a reasonable life expectancy under relatively arduous conditions.

We have now devised an improved lifting device which obviates the problems of the prior art.

In accordance with the first aspect of the present invention a lifting device comprises a rigid base hingedly secured to a rigid seat, and an inflatable bag located between and secured to at least one of the rigid base and the rigid seat.

The provision of a rigid base, hingedly connected to a rigid seat, with an inflatable bag positioned between the base and seat, greatly enhances the stability of the device as compared with inflatable cushions of the prior art which are inherently flexible. The person using the device of the present invention will not tend to rock from side to side as they are liable to do on a simple flexible inflatable cushion, and may press down on the rigid seat to assist final movement into the standing position. Further, when the device of the present invention is used in reverse, that is as an aid to lowering a user into a seat, the rigid seat provides a firm surface which the user can touch or lightly support themselves on as they move into engagement with the lifting device.

The invention will be better understood from the following description of a preferred embodiment thereof, given by way of example only, reference being had to the accompanying drawing wherein the single Figure illustrates schematically and in exploded perspective view a preferred embodiment of the present invention.

Referring to the drawing, the illustrated lifting device 1 is particularly suitable for use by elderly or frail individuals or those recuperating from a surgical operation, to assist the user in rising from the seated position to a standing position and vice versa. The device comprises a rigid base 2 which, in the assembled device, is secured to a rigid seat 3 by means of hinges 4. Although the illustrated hinges are of the butt type, it will be appreciated that other types of hinge may be used, and in particular the hinge design may be such that the edges of the base and the seat which are connected by the hinges are, in the assembled condition, spaced apart somewhat.

Located between the rigid base and the rigid seat is an inflatable bag 5. The bag 5 comprises a body 6 which is a section of a tube. The tube may be a straight tube or may be bent. In other words, when viewed in longitudinal cross-section the opposite edges of the tube may be straight or curved. The inflatable bag 5 also comprises ends 7,8. The ends are generally planar if the bag is in the erect configuration illustrated in the drawing, but not subject to significant internal pressure. The bag is formed by forming the body 6 by any suitable conventional technique and then joining the end of the body to the peripheral regions of the ends 7,8 to form outwardly projecting flanges 9,10. The bag may be formed from any suitable material, for example a rubberised canvas material or a synthetic plastics material.

An inflation/deflation fitting 11 is secured to the lower end 8 of the inflatable bag and, in use, is connected to tubing 12 for the supply of inflation air or the removal of inflation air from the interior of the bag.

The base 2 and seat 3 have machined recesses 13 (only the recess in the base is visible in the drawing), the recesses being shaped to receive the respective ends 8,9.

During manufacture, the inflatable bag is formed as a complete unit using appropriate manufacturing techniques and is then offered up to the pre-assembled base and seat. The respective flanges 9,10 of the inflatable bag are secured in their associated recesses by means of flange rings 14 which are secured to the base or seat by means of screws which pass through apertures provided in the flanges 8,9. This technique provides

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